

Att'y Dkt. No. US-1270

U.S. App. No: 09/459,573

**REMARKS**

Claims 45-53 were pending; claim 51 has been cancelled and claim 45 has been amended. Favorable reconsideration, reexamination, and allowance of the present patent application are respectfully requested in view of the foregoing amendments and the following remarks.

***The AW reference on the April 8, 2002 IDS***

As indicated in the official action on page 2, the Examiner has not considered the AW reference listed on the April 8, 2002 Information Disclosure Statement filed by Applicants. It is noted that this is an undated database print-out, and that there are two literature references cited as sources at the bottom of the print-out. Both of these references were previously cited by the Examiner and therefore, are of record. Therefore, Applicants have fulfilled the duty set forth in 37 C.F.R. 1.56.

***The Objection to Claim 46 for Informalities***

Claim 46 was objected to for informalities relating to consistency of claim terms. Applicants have amended the claim to incorporate the Examiner's suggested language. Therefore, Applicants respectfully request that the objections be withdrawn.

***The Rejection of Claims 45-53 under 35 U.S.C. §112, 1<sup>st</sup> Paragraph***

Claims 45-53 were rejected under 35 U.S.C. §112, 1<sup>st</sup> paragraph, as allegedly failing to comply with the written description requirement. In particular, the Examiner alleges that there is no description of a single proline or glutamic acid excreting protein, nor, the Examiner alleges, is there any disclosure of the critical structural elements required in a polynucleotide which hybridizes to the polynucleotide of SEQ ID No. 9

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under the claimed conditions. Lastly, the Examiner alleges that there is no disclosure of a method of producing L-lysine, L-proline, or L-glutamic acid using an Escherichia cell wherein the expression of a protein able to excrete proline or glutamic acid is increased.

Applicants respectfully disagree with the above assertions and allegations, and respectfully assert that claimed invention is fully and adequately described by the disclosure. The Examiner has agreed with applicants' arguments regarding the effect of expressing the YahN gene in the increased production of glutamic acid, lysine and proline. The Examiner also has acknowledged the teachings of the specification shown in Examples 3 and 7, and the structure of YahN gene and corresponding protein.

The Examiner has asserted that the increased transport of proline and glutamic acid demonstrated by applicants in Examples 3 and 7 is not necessarily a result of increased transport of these amino acids by the polypeptide of SEQ ID No. 10. The Examiner is essentially refuting applicants' data, which the Examiner is required to accept unless citing contradictory evidence to the contrary. It is unclear how the Examiner can choose to ignore data that fully supports the claim, the only rationale for doing so being that there might be some other explanation for the increase, yet failing to cite more than vague uncorroborated reasons. If the Examiner is aware that the data presented by the applicants to support the invention is faulty or non-supportive, then the Examiner must cite evidence, references and/or data which supports such an assertion. In the absence of such corroborating evidence, the data presented by applicants is *prima facie* supportive of its clear result – that glutamic acid and proline transport are increased when the YahN protein is enhanced.

Regarding the Examiner's assertion that the specification fails to disclose the

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structural elements in a polypeptide encoded by a polynucleotide which hybridizes under the recited conditions to the polynucleotide of SEQ ID No. 9 that are characteristic of glutamic acid or proline excreting proteins, applicants assert that the genus of polynucleotides falling within this definition is relatively small since the hybridization conditions are claimed as under stringent conditions. Clearly, it is within the skill of the ordinarily skilled artisan to determine if a chosen sequence will hybridize under these conditions, and then determine if the resulting protein will have an activity of excreting L-proline, L-glutamic acid, and L-lysine using the disclosed well-known assay.

Determination and isolation of hybrids under the stated conditions involves experiments well within the skill of the ordinarily skilled artisan, and therefore, entails no undue experimentation. A representative number of species has been presented in the Examples in the specification since one can easily, and without undue experimentation, determine whether a species will fall within the genus or not.

The Examiner has also rejected claims 45-53 under 35 U.S.C. 112, 1<sup>st</sup> paragraph for being non-enabling for a method wherein the E. coli cell has been modified such that any proline or any glutamic acid excreting protein is increased.

In addition to the above arguments, applicants also wish to point out that if the increase of L-proline and L-glutamic acid production were due to the increase of L-lysine synthesis, the L-lysine production would also be increased. However, as is shown in the exemplified strains of Examples 3 and 7, L-lysine production is not as good as L-proline or L-glutamic acid production. Therefore, it is reasonable to conclude that the polypeptide of SEQ ID NO. 10 has a broad specificity with respect to amino acid excretion, that is, the ability to excrete L-proline, L-lysine, and L-glutamic acid.

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Based on these arguments, Applicants assert that the rejections under 35 U.S.C. §112, 1<sup>st</sup> paragraph are improper and should be withdrawn. Applicants respectfully request action to this effect.

***Rejection of the claims under 35 U.S.C. §103***

The Examiner has rejected the claims under 35 U.S.C. §103(a) as allegedly being unpatentable over Blattner in view of Vrljic and Kojima. The Examiner has stated that claims 45-53 would be allowable if claim 45 is (1) limited to the production of proline and glutamic acid, and (2) limited to L-lysine excreting activity in step (B). Regarding (1), claim 45 has been rewritten as suggested by the Examiner. Regarding (2), it is reasonable that the activity of excreting L-proline, L-lysine, and L-glutamic acid is recited in the claim, as discussed above.

For these reasons, applicants respectfully submit that the claimed invention is not obvious of the art of record. Applicants respectfully request that the Examiner reconsider the claimed invention in light of the comments set forth above, and withdraw the rejection.

***Conclusion***

For at least the foregoing reasons, Applicant respectfully submits that the present patent application is in condition for allowance. An early indication of the allowability of the present patent application is therefore respectfully solicited.

If Examiner Ramirez believes that a telephone conference with the undersigned would expedite passage of the present patent application to issue, she is invited to call on the number below.

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It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and the undersigned respectfully requests that she be contacted immediately.

Respectfully submitted,

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